

A FORMAL CASE FOR THE RECOGNITION OF A COMPREHENSIVE PORTFOLIO OF EVIDENCE

This presentation provides a curated body of evidence demonstrating sustained, high-level achievement in Electrical Engineering, Technical Education, and Systems Innovation by Tshingombe Tshitadi.

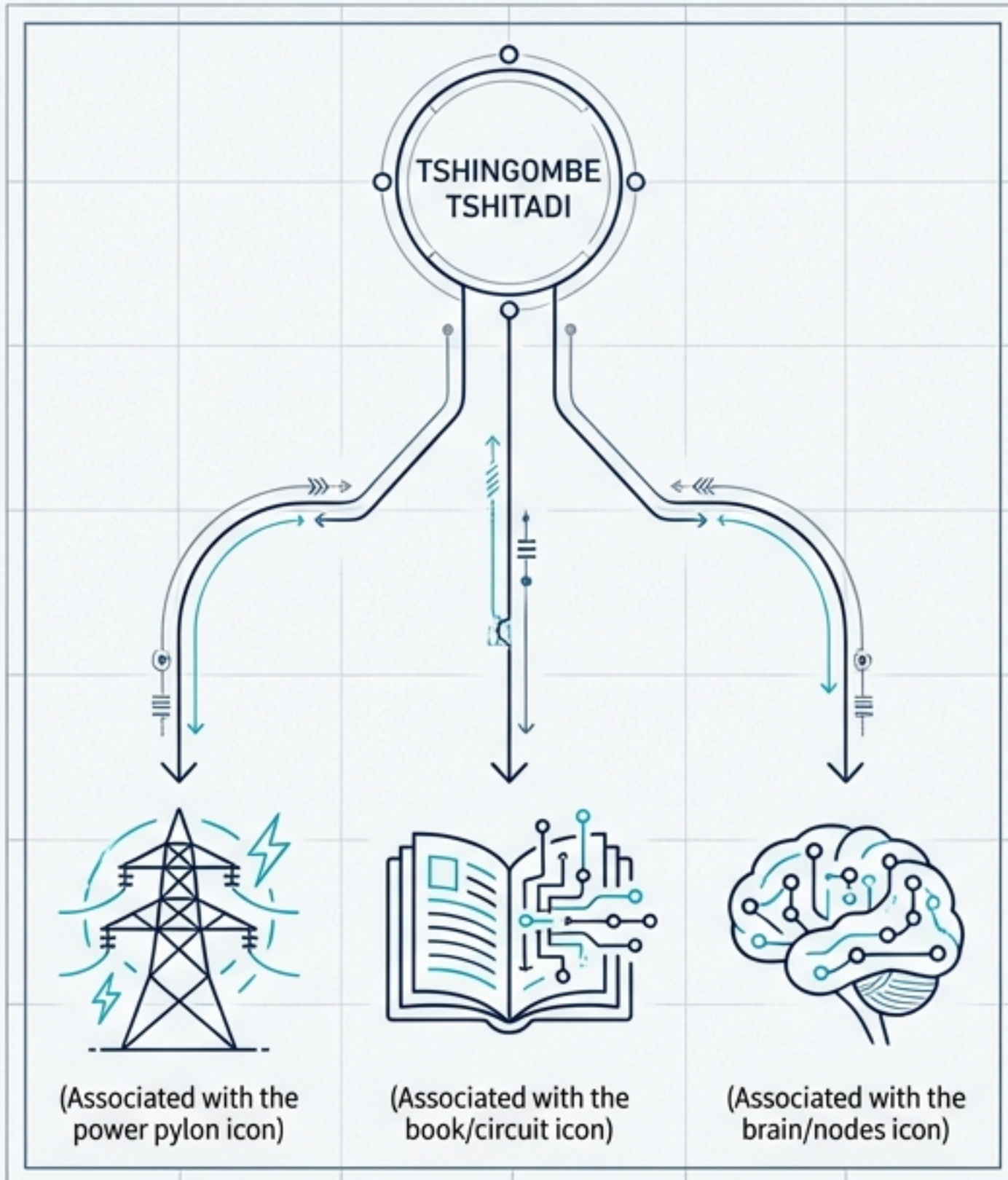
The portfolio is submitted for formal evaluation and recognition of qualifications, skills, and experience against the National Qualifications Framework (NQF).

It is intended to support applications for:

- Doctoral Program Admission
- Professional Registration (e.g., ECSA)
- Equivalency Assessment by Qualifications Authorities (e.g., SAQA)

The following slides systematically present evidence across key thematic pillars, arguing for recognition based on demonstrated substance and rine and proficiency.

EXECUTIVE SUMMARY: A CAREER ARCHITECTED THROUGH PERSISTENT INQUIRY



Core Competency Areas

1. Electrical Engineering & Power Systems

Deep practical and theoretical knowledge from **fundamental principles** (AC/DC theory, SANS standards) to **advanced applications** (smart grids, renewable energy).

2. Technical Pedagogy & Curriculum Design

A **proven ability to design, implement, and assess** technical training programs within TVET frameworks, leveraging **modern didactic methods** and **learning management systems**.

3. Digital Systems & Innovation

Prolific, self-directed mastery of **contemporary technology stacks**, including **AI/Machine Learning**, **cloud infrastructure**, and **data analytics**, applied to solve engineering challenges.

Narrative Summary

Tshingombe Tshitadi's career is defined by a **relentless pursuit of knowledge and its practical application**. This portfolio documents a journey from formal vocational training to **independent research**, showcasing a **unique synthesis of hands-on expertise and forward-looking technological innovation**.

PILLAR 1: FOUNDATIONAL ACADEMIC AND VOCATIONAL QUALIFICATIONS



FORMAL CERTIFICATION

Qualification: Advanced Certificate in Education: Technical Education **NQF Level 6**

Institution: As listed in formal CV documentation.

Focus: This qualification provides the pedagogical foundation for technical training and curriculum development, a recurring theme in this portfolio.



ENGAGEMENT WITH NATIONAL VOCATIONAL STANDARDS

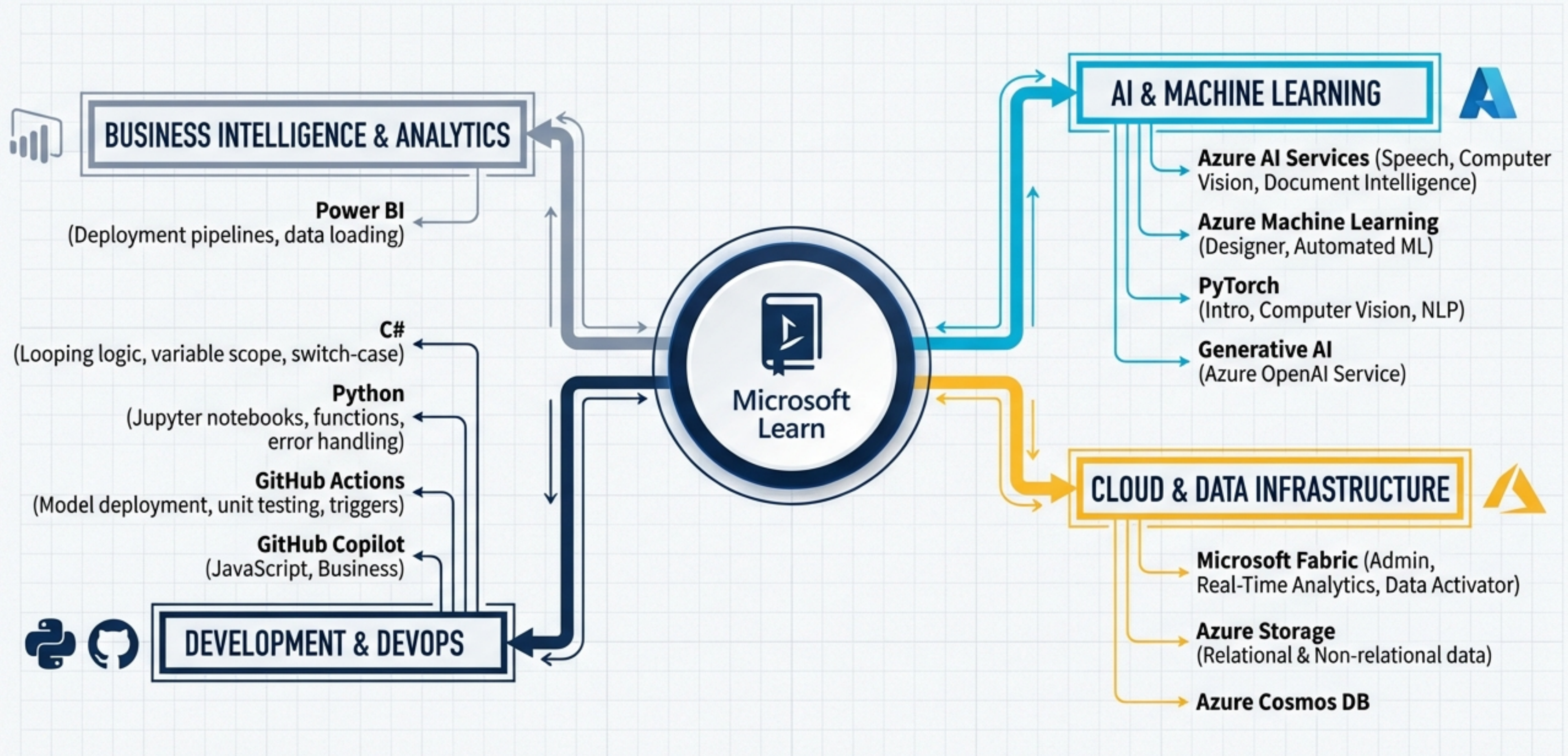
Framework: Deep familiarity with the South African TVET College system (DHET/NATED), evidenced by extensive work with N1-N6 level curriculum content in subjects including:

- Electrical Trade Theory
- Industrial Electronics
- Mathematics
- Engineering Science

International Standards: Familiarity with international vocational frameworks, referencing the Scottish Qualifications Authority (SQA) 'National 4 Skills for Work Engineering Skills' course, which includes modules in Mechanical, Electrical/Electronic, Fabrication, and Manufacture/Assembly.

PILLAR 2: PROLIFIC MASTERY OF MODERN TECHNICAL STACKS

A documented record of continuous upskilling in high-demand technologies, primarily through the Microsoft Learn platform.



A STRATEGIC APPROACH TO LIFELONG LEARNING AND CAREER DEVELOPMENT

Platform Focus: **Alison** – Global E-Learning Platform



KEY ACTIVITIES & EVIDENCE



TARGETED COURSE ENROLLMENT

Actively engaged in a platform offering over [5,500 courses](#), with a focus on the 'Engineering & Construction' (795 courses) and 'IT' (1,217 courses) categories.



STRUCTURED CAREER PLANNING

Utilization of platform tools to guide professional development:

- **Career Ready Plan:** A guided tool to align education with professional goals.
- **Aptitude & Reasoning Tests:** Undertaken assessments in verbal and numerical reasoning.

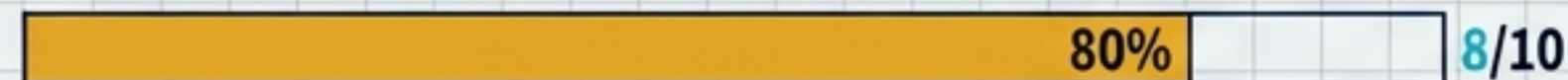


CONTENT CREATION

Created and edited course material on the platform ('[First Module for Evaluation tshingombe fiston \(ID: 27845\)](#)'), demonstrating pedagogical initiative.

ASSESSMENT INSIGHTS

Assertiveness



Entrepreneurial Spirit



Workplace Personality Assessment results indicating alignment with leadership and self-starter roles.

PILLAR 3: A CONSISTENT RECORD OF INDEPENDENT RESEARCH AND INNOVATION

A documented history of proposing and developing projects at the intersection of electrical engineering, control systems, and education technology.



POWER SYSTEMS & SMART GRIDS

- Case study on **cost-benefit analysis** of microgrids in remote areas.
- Enhancing **demand response strategies** using machine learning.
- Optimization of **battery energy storage** for grid stabilization.



CONTROL SYSTEMS & AUTOMATION

- **AI-Based Predictive Maintenance** for fault detection in power transformers.
- Developing **high-efficiency resonant inductive coupling systems** for wireless power transfer.



EDUCATIONAL TECHNOLOGY & POLICY

- **'Implementation workplace and school Engineering** circular assessment police educat technologie teach and technot electrical subject school qualicafition levej'
- **'Thesis:** Research policy trade theory minimum : legislation skill development'
- **'Digital Automation and Engineering Documentation** Using VBA Macros and Form Controls'

ENGAGING WITH THE FORMAL RESEARCH & FUNDING ECOSYSTEM

Proactively seeking validation and support from national and international scientific bodies.

National Science Foundation (NSF), USA



- **I-Corps Program:** Application submitted (P-09874). Declined due to administrative eligibility requirements, not technical merit.
- **SBIR/STTR Program:** Project Pitch submitted for 'Advanced Manufacturing (M)' topic.

Official Reason Stated:

'The applicant does not meet the eligibility requirements. To be eligible, the core technology needs to have been developed at an accredited institution of higher education...' (Email from Ruth Shuman, Program Director).



Ruth Shuman
to me

Oct 26, 2023, 10:45 AM

Ruth Shuman,

"The applicant does not meet the eligibility requirements. To be eligible, the core technology needs to have been developed at an accredited institution of higher education..." (Email from Ruth Shuman, Program Director).

National Research Foundation (NRF), South Africa



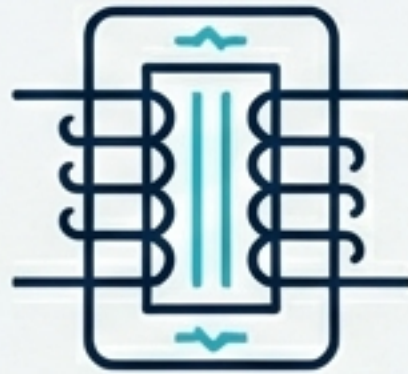
- Multiple applications submitted via NRF Connect portal ([ORCID: 0009-0005-2690-9559](#)).
- Includes applications for '[Thuthuka](#) PhD Track' and 'Support for Y-rated Researchers,' indicating ambition for doctoral-level research.

Academic Publications & Platforms

- **Accepted Paper:** 'Re: Thesis . Degree honour...' ([Paper ID: IJETR3147](#)) accepted for publication in IJETR Volume 15 Issue 1.
- **Active Submissions:** Projects and theses uploaded to platforms including [Elektor Magazine Labs](#) and [Internet Archive](#) for public dissemination.

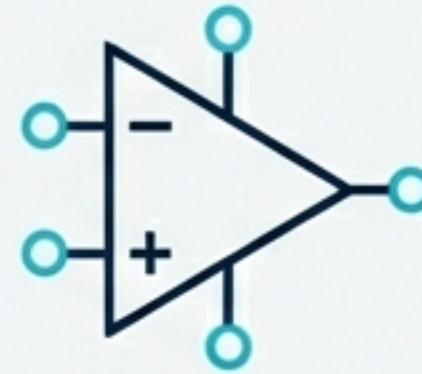
PILLAR 4: CORE COMPETENCIES IN ELECTRICAL ENGINEERING PRACTICE

Demonstrated proficiency across key domains of electrical engineering, evidenced by engagement with N-level examination content and technical specifications.



POWER SYSTEMS & MACHINES

- **Control Systems:** Analysis and application of Ward-Leonard control systems.
- **AC/DC Systems:** Calculation and analysis of three-phase AC systems (delta/star), DC machines, and transformers.
- **Switchgear & Protection:** Application of induction disc relays, understanding of break capacity.



INDUSTRIAL ELECTRONICS & CONTROL

- **Circuit Analysis:** Application of Kirchhoff's laws, Thevenin's theorem, and analysis of R-L-C circuits (transients, decay).
- **Components & Devices:** In-depth knowledge of thyristors, SCRs, diodes, rectifiers, and operational amplifiers.
- **System Analysis:** Experience with Bode plots and Nichols charts for control system stability analysis.



INSTALLATION, SAFETY & COMPLIANCE

- **SANS 10142-1:** Application of national wiring code for conductor installation, distribution boards, and verification/testing protocols.
- **Safety Procedures:** Knowledge of lockout/tagout, insulation testing, and inspection of circuit breakers and switchgear.
- **Technical Documentation:** Ability to interpret and create schematics, wiring diagrams, and complete test reports.

A PROVEN PRACTITIONER IN TECHNICAL CURRICULUM DESIGN

Designing and structuring effective learning experiences for technical and vocational education.

Evidence of Pedagogical Practice

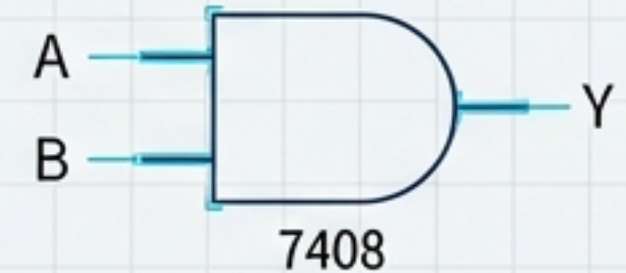
1. Institutional Planning

Developed a comprehensive 'Teach and learning plan 2022./2023" for St Peace College, covering purpose, aims, objectives, and assessment strategies for NATED engineering and business studies.



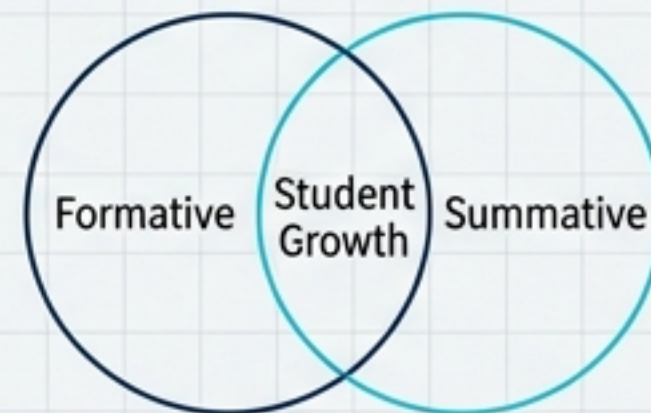
2. Instructional Design

Authored detailed practical exercises such as 'Exercise 4.1.173: Practice on Various Logics Using Logic Gates and Circuits,' with specific learning objectives, procedures, and required components (TTL and CMOS ICs: 7408, 7432, 7404, CD4079).



3. Assessment Methodology

Demonstrated understanding of formative vs. summative assessment, outcome-based education, and the role of the teacher as a "coach and facilitator."



4. LMS and Technology Integration

Familiarity with Learning Management Systems (Blackboard, Schoology, Google Classroom) and educational models like the Technology Acceptance Model (TAM).



PILLAR 5: A DOCUMENTED HISTORY OF ENGAGEMENT WITH QUALIFICATIONS AUTHORITIES

Proactively seeking clarification and resolution for qualification irregularities through official channels.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

- **Subject:** Foreign Institutions Inquiries (#6594)
- **Date:** 8 July 2022
- **Purpose:** Submitted an inquiry regarding the evaluation of foreign qualifications, specifically concerning a student with a mix of RSA (N4/N5/N6) and DR Congo qualifications.
- **Significance:** This demonstrates a direct and documented attempt to work within SAQA's framework to resolve complex cross-border qualification issues, showing familiarity and respect for the authority's processes.

TO:	[SAQA Official Contact]
FROM:	[Sender's Name/Institution]
SUBJECT:	Inquiry regarding Foreign Qualification Evaluation (#6594)
DATE:	8 July 2022



DEPARTMENT OF HIGHER EDUCATION AND TRAINING (DHET)

- Extensive engagement evidenced by the use of official DHET examination papers, calendars, and planning templates, indicating deep integration with the national TVET system.



SEEKING SENIOR ROLES IN TECHNOLOGY, SECURITY, AND ENGINEERING MANAGEMENT

A record of applications for high-level positions requiring advanced technical and analytical skills.



Role: Digital Fraud Detection and Resolution

Requirements: Bachelor's Degree (NQF 7) with 8-10 years' experience in data analysis, fraud, or tax.



Roles: Project Manager & Project Management Leader (Customer Projects)

Responsibilities: Lead project teams, manage scope and deliverables, control costs and margin.



Expressed interest in joining, requiring passing a job-related fitness test (JRFT) and security clearance.



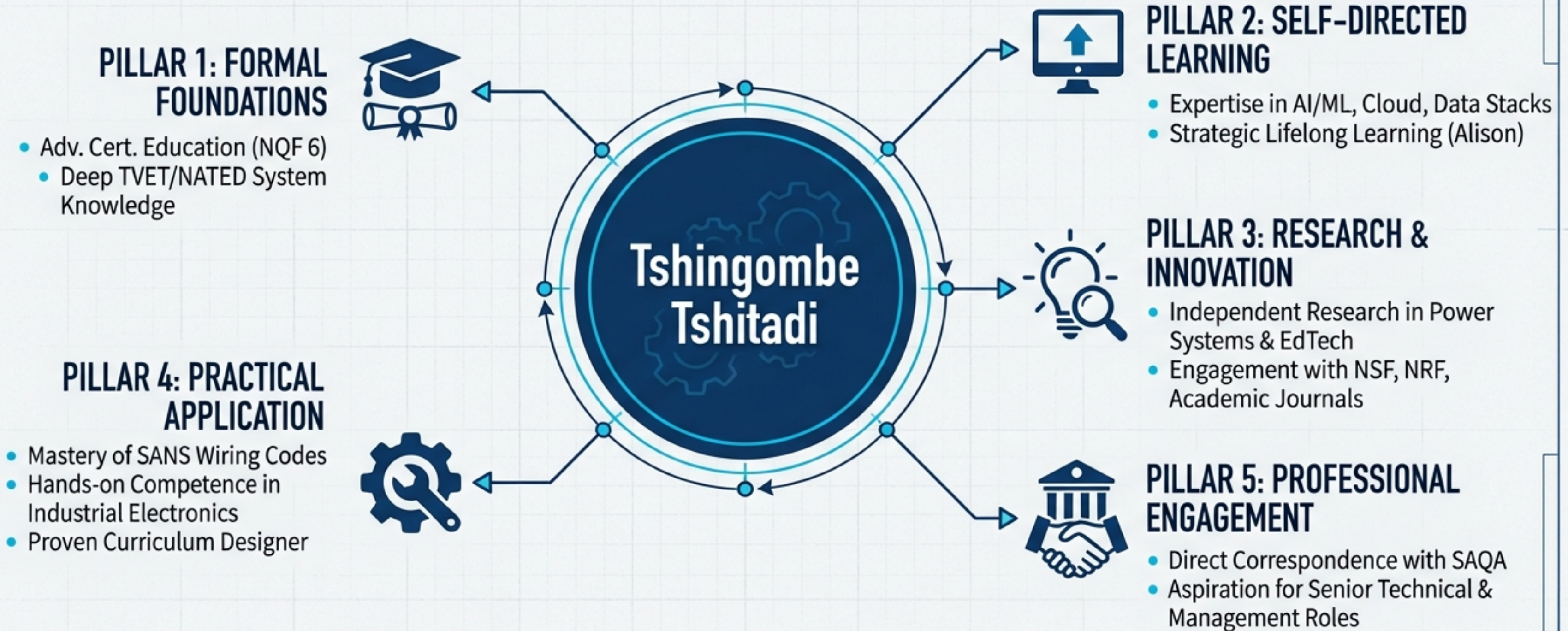
Registered on the invoice portal, indicating engagement for potential service provision or partnership.



Job alerts for roles like 'IT Service Desk Manager' and 'Cloud Architect'.

A SYNTHESIS OF CAPABILITIES: A MULTIDISCIPLINARY SKILL PROFILE

A cohesive summary of a diverse and integrated professional profile.



THE CASE FOR RECOGNITION: DEMONSTRATING EQUIVALENCE AND PROFICIENCY

THE ARGUMENT

The comprehensive body of work detailed in this portfolio demonstrates a level of theoretical knowledge, practical application, and research initiative that is equivalent to, and in areas exceeds, the outcomes specified for formal postgraduate qualifications.

MAPPING TO THE NATIONAL QUALIFICATIONS FRAMEWORK (NQF)

The evidence presented supports a claim of proficiency commensurate with:

NQF Level 8 (Honours / Postgrad Diploma)

Evidenced by the depth of specialized knowledge in industrial electronics and control systems, and the ability to conduct independent research (demonstrated through NSF/NRF applications and paper submissions).

NQF Level 9 (Master's Degree)

Argued through the synthesis of advanced technical knowledge with pedagogical design, the creation of novel systems (VBA automation), and sustained engagement with the formal research community.

REQUEST

We request a formal assessment of this portfolio for the purpose of recognizing this demonstrated equivalence, thereby enabling access to doctoral studies and professional registration.

PORTFOLIO APPENDIX: A CATALOGUE OF VERIFIABLE EVIDENCE

The following key documents, which form the basis of this presentation, are available for review.



Academic & Professional Development

- Formal Qualification Certificates (Adv. Cert. Ed.)
- Complete Microsoft Learn Transcript (>50 badges)
- Alison Learning Platform Profile & Assessments
- Detailed CV and Work History



Research & Publications

- NSF SBIR/STTR Project Pitch Submission
- NSF I-Corps Application & Decision Letter
- NRF Connect Application Screenshots
- IJETR Publication Acceptance & Invoices
- Copies of Submitted Theses and Papers



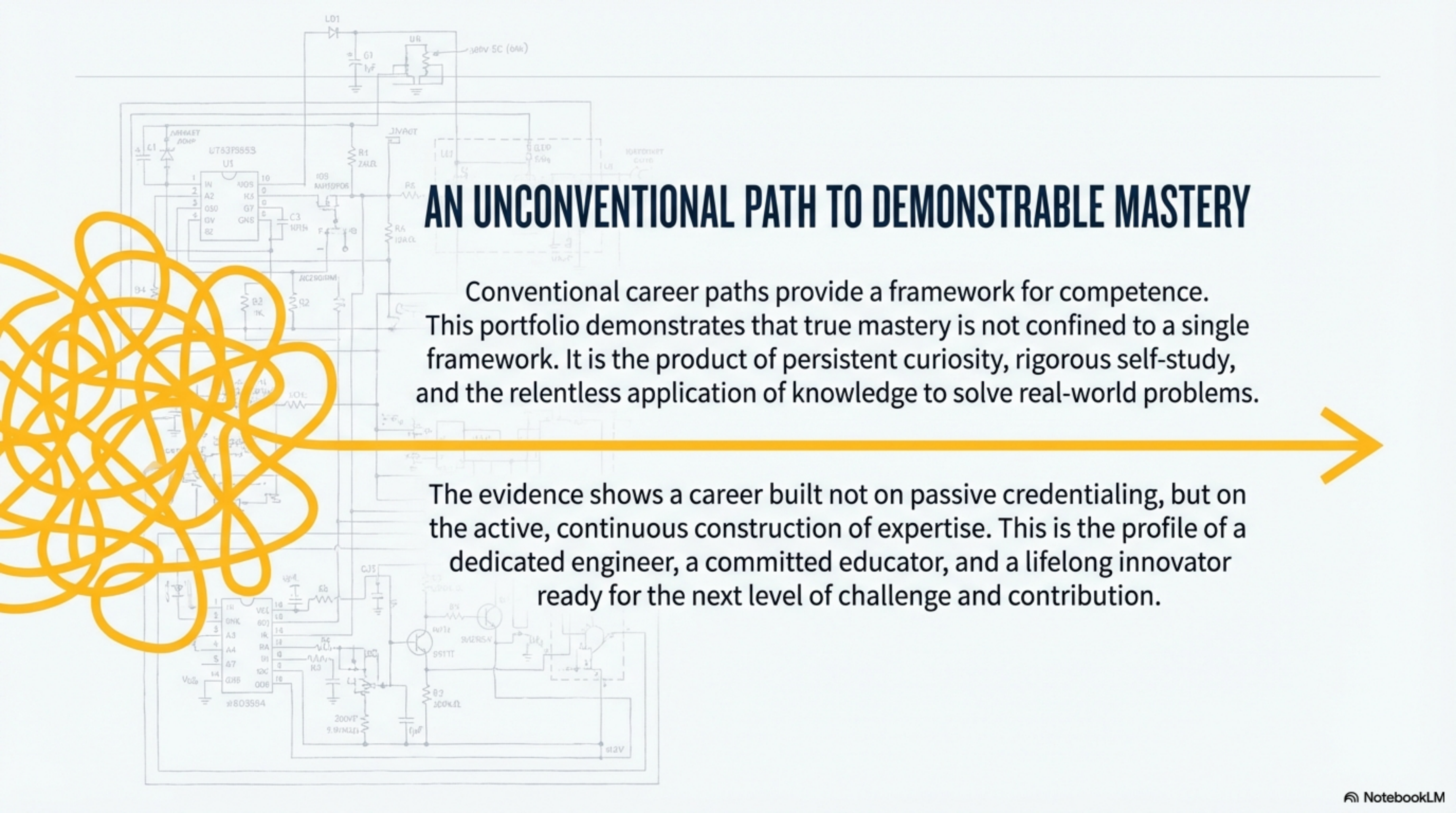
Technical & Pedagogical Portfolio

- St Peace College Teaching & Learning Plan
- Sample Curriculum Modules & Practical Exercises
- Selection of Authored Technical Notes & Analyses



Official Correspondence

- Emails with SAQA re: Foreign Qualifications
- Record of Applications to Senior Professional Roles



AN UNCONVENTIONAL PATH TO DEMONSTRABLE MASTERY

Conventional career paths provide a framework for competence. This portfolio demonstrates that true mastery is not confined to a single framework. It is the product of persistent curiosity, rigorous self-study, and the relentless application of knowledge to solve real-world problems.

The evidence shows a career built not on passive credentialing, but on the active, continuous construction of expertise. This is the profile of a dedicated engineer, a committed educator, and a lifelong innovator ready for the next level of challenge and contribution.